What Is Claimed Is:

1   1.   An equipment area network (EAN) for a plurality of pieces of equipment, comprising:

2   a plurality of local controllers each being dedicated and connected to an individual one of said

3   plurality of pieces of equipment, respectively;

4   a plurality of local Web servers each being dedicated and connected to an individual

5   one of said plurality of controllers, respectively; and

6   local isolation means for selectively isolating said equipment area network from other

7   networks outside of said equipment area network, said plurality of local Web servers being

8   individually connected to said isolation means.

1   2.   The EAN of Claim 1, further including:

2   local browser means connected to said isolation means for selectively communicating with

3   said plurality of local Web servers, and with remotely located Web servers in said other

4   networks.

1   3.   The EAN of Claim 1, wherein said plurality of local controllers each consist of a

2   programmable logic controller.

1   4.   The EAN of Claim 1, wherein said local isolation means includes a plurality of local

2   router/switches each being connected to individual ones of said plurality of local Web servers

3   respectively, and to at least one of said other networks.

1   5.   The EAN of Claim 2, wherein said local isolation means includes a plurality of local

2   router/switches each being connected to all of individual ones of said plurality of local

3   controllers, respectively, to individual ones of said plurality of local browser means,

4   respectively, and to at least one of said other networks.

1   6.   The EAN of Claim 2, wherein said local browser means includes a plurality of Web

2   browsers each being individually connected to said local isolation means.

1   7.   The EAN of Claim 5, wherein said local browser means includes a plurality Web

2   browsers, and said plurality of local router/switches are each connected to an individual one

3   of said Web browsers, respectively.

1   8.   The EAN of Claim 6, wherein said plurality of Web browsers each include:

2   a PC; and

3   Web browser software means for programming said PC to provide Web browser

4   functions.

1   9.   The EAN of Claim 7, wherein said plurality of Web browsers each include:

2   a PC; and

3   Web browser software means for programming said PC to provide Web browser

4   functions.

1   10.   The EAN of Claim 4, further including a plurality of Ethernet input/output modules

2   connected to individual ones of said plurality of local router/switches, respectively.

1   11.   The EAN of Claim 4, further including:

2   said plurality of local router/switches each having a unique address, respectively; and

3   said plurality of local Web servers each having the same network address.

1   12.   The EAN of Claim 5, further including:

2   said plurality of local router/switches each having a unique address, respectively;

3   said plurality of local Web servers each having the same network address; and

4   said local browser means includes a plurality of Web browsers each having the same

5   address.

1   13.   The EAN of Claim 11, further including a plurality of Ethernet input/output modules

2   each having the same network address, and each being connected to individual ones of said

3   plurality of local router/switches, respectively.

1   14.   The EAN of Claim 12, further including a plurality of Ethernet input/output modules

2   each having the same network address, and each being connected to individual ones of said

3   plurality of local router/switches, respectively.

1   15.   The EAN of Claim 1, wherein said plurality of local Web servers each further include

2   means for providing Web pages identifying their associated piece of equipment, optionally its

3   interconnection with other equipment included in the EAN, its present operating parameters,

4   and other data of interest relative thereto.

1   16.   An equipment area network (EAN) comprising:

2   at least one piece of equipment;

3   a controller connected to said equipment;

4   a local Web server connected to said controller; and

5   isolation means connected to said Web server, for selectively isolating said EAN from

6   other networks.

1   17.   The EAN of Claim 16, further including a local HMI Web browser connected to said

2   isolation means.

1   18.   The EAN of Claim 16, wherein said controller is a programmable logic controller.

2   19.   The EAN of Claim 16, wherein said isolation means consists of a router/switch.

1   20.   The EAN of Claim 16, further including:

2   said controller consisting of a programmable logic controller; and

3   said isolation means consisting of a router/switch.

1   21.   The EAN of Claim 17, wherein said local HMI Web browser includes:

2   a PC; and

3   Web browser software means for programming said PC to provide Web browser

4   functions.

1   22.   The EAN of Claim 16, wherein said local Web server includes means for providing

2   Web pages identifying said piece of equipment, optionally its interconnection with other

3   equipment, its present operating parameters, and other data of interest relative thereto.

1   23.   A method for providing an equipment area network (EAN) for each one or more

2   pieces of equipment or devices, wherein for each local piece of equipment the method

3   comprises the steps of:

4   connecting a local controller to the piece of equipment;

5   connecting a local Web server to said controller;

6   connecting a local router between said Web server and a computer network, for

7   providing isolation therebetween while allowing selective communication therebetween; and

8   assigning a unique network address to said router for devices outside the EAN.

1   24.   The method of Claim 23, further including the steps of:

2   connecting at least one Ethernet based input/output module to said router for devices inside

3   the EAN.

1   25.   The method Claim 23, further including the steps of:

2   connecting a spare port to said router for connection to one of the group consisting of a

3   laptop computer, sub-systems of said equipment, and other devices inside the EAN.

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1 26. The method of Claim 23, further including the step of:

2   connecting a local HMI Web browser to said router.

1 27. The method of Claim 23, further including the steps of:

2   assigning the same network address, if an address is required, to each controller

3 associated with each piece of equipment; and

4   assigning the same network address to each Web server associated with each piece of

5 equipment.

1 28. The method of Claim 26, further including the steps of:

2   (A) configuring said router to receive requests from Web browsers both local and

3 remote to said EAN;

4   (B) responding to a request from a Web browser by having said router check the

5 source network address of the requesting browser;

6   (C) determining in response to a requesting local Web browser the destination

7 network address it is requesting;

8   (D) configuring said router to respond to a destination network address for a

9 remote Web server by using network address translation (NAT) to translate the associated

10 source network address;

11   (E) forwarding via said router to said remote Web server an answer to the request;

12   (F) receiving via said router a response from said remote Web server that it

13 received the answer; and

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14   (G)   forwarding the response to the associated said local Web browser of said EAN.

1   29.   The method of Claim 28, further including after step (B) the steps of:

2   (H)   determining in response to a requesting remote Web browser the destination

3   network address it is requesting;

4   (I)   ignoring the request in response to the destination network address being for a

5   remote Web server;

6   (J)   sending the request to the associated local Web server in response to the

7   destination network address being that of another local Web server;

8   (K)   Operating the associated local Web server to check the source network address

9   of the Web browser making the request;

10   (L)   responding to the request via the associated said local Web server using remote

11   privileges if the source network address is that of a remote Web browser; and

12   (M)   forwarding a response via the associated said local router to the requesting

13   remote browser.

1   30.   The method of Claim 29, further including after step (K) and before step (L) the step

2   of:

3   (N)   authenticating via the associated said local Web server the password of the

4   requesting remote Web browser.

1   31.   The method of Claim 29, further including after step (K) the steps of:

2   (O)   responding to the request via the associated said local Web server using local

3   privileges if the source network address is that of a requesting local Web browser; and

4   (P)   forwarding a response via the associated said local router to the requesting

5   local browser.

1   32.   The method of Claim 29, further including after step (K) and before step (O) the step

2   of:

3   authenticating via the associated said local Web server the password of the requesting

4   local Web browser.

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